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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/532,687      | 03/22/2000  | David W. Livingston  | 97-1834             | 8857             |

7590 05/05/2004

Intellectual Property Office  
The Pennsylvania State University  
113 Technology Center  
University Park, PA 16802

EXAMINER

CLARDY, S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1616

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/532,687

**Applicant(s)**

LIVINGSTON, DAVID W.

**Examiner**

S. Mark Clardy

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-22-00.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

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Claims 1-11 are pending in this application.

Applicant's claims are drawn to compositions comprising:

N fertilizer (claim 7: isobutylenediurea<sup>1</sup>)

Surfactant or wetting agent (claim 4: nonionic)

Metal salt (claim 3: copper, zinc, or iron sulfate)

Optionally containing a pH adjusting agent for pH 2-6 (claim 10), e.g., acetic acid (claim 11).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Everingham et al (US 3,964,893), Moore (US 5,021,247), and Kulik (US 6,458,747).

Everingham et al teach lawn moss control using a ferric ammonium sulfate - ammonium sulfate double salt made by combining ferric ammonium sulfate with ammonium sulfate in a granulating process (column 1). The composition may be used alone, or in combination with additional plant nutrient additives such as ammonium sulfate (col 1, lines 32-35). Surfactants are not disclosed.

Moore teaches granular materials which are useful in agriculture, both for plant fertilizers and micronutrients, as well as animal feed (abstract). In processing the granules, acidic materials such as acetic acid or ammonium sulfate may be added for neutralization purposes (col 7, lines

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3-9). Synthetic nitrogen sources which may be incorporated into the granules include isobutylidene diurea (col 8, lines 35-44). Micronutrient materials include metal salts such as zinc sulfate, iron sulfate, manganese sulfate, and copper sulfate (col 9, lines 10-20). Surfactants are not disclosed.

Kulik teaches slow acting fertilizer compositions comprising agricultural products from waste materials, and surfactant (abstract). The compositions may contain additional fertilizer materials such as urea, isobutylene diurea, ammonium sulfate, etc. (col 5, lines 34-50), but micronutrient materials are not disclosed.

One of ordinary skill in the art would be motivated to combine these references because they disclose components which may be added to fertilizer compositions to enhance the effectiveness of agricultural products.

Thus, it would have been *prima facie* obvious to the ordinary artisan at the time the invention was made to have combined a nitrogen fertilizer material, a surfactant, and a metal salt, in a single composition because the prior art teaches the utility of combining nitrogen containing fertilizer materials such as ammonium sulfate or isobutylene diurea with micronutrient materials such as metal salts. Everingham et al teach that such fertilizer compositions would exhibit moss inhibiting effects, in addition to being active as fertilizers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

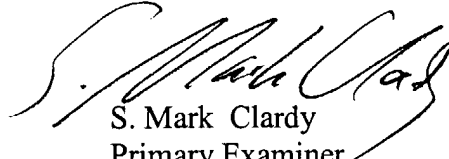
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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<sup>1</sup> A condensation product of isobutyraldehyde and urea with a minimum total N of 30%:  $iPr-CH(NHCONH_2)_2$

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Mark Clardy  
Primary Examiner  
Art Unit 1616

April 30, 2004